

Amendments to Specification

Please change paragraphs [0025] and [0026], as follows:

[0025] In the present embodiment, the control unit 7 controls the pulse valve 47 according to each of the operations of the mass spectrometry as follows. Fig. 2 is a chart for explaining the control operation. The control unit 7 controls the ESI ion source 3, the power supply 45, and the TOFMS 5 in a series of the introducing operation, retention operation, and discharging operation. The control unit 7 turns off or closes the pulse valve 47 in the introducing and discharging operations, and turns on or ~~open~~ opens the pulse valve 47 in the retention operation. The retention operation normally takes 10 msec to 100 msec, and the pulse valve 47 can be operated at a far higher speed.

[0026] Accordingly, when the pulse valve 47 is turned on, the cooling gas flows into the ion trap 4 at a certain flow rate balancing with a an evacuating speed of the vacuum pump 2, so that the gas pressure inside the inner ion trap 4 is maintained at about 6×10^{-3} [Pa]. When the pulse valve 47 is turned off, a leak flow rate of the pulse valve 47 balances with the discharge rate of the vacuum pump 2, so that the gas pressure inside the inner ion trap 4 is maintained at about 1×10^{-3} [Pa].